

AMENDMENTS TO THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) An image reading apparatus, comprising:
 - a light source adapted to illuminate ~~a document~~ an original;
 - ~~a plurality of image sensing elements~~ an image sensor adapted to scan said original and output electrical signals ~~in accordance with an input light quantity~~;
 - a first reference member which is arranged in an original scanning area of said image sensor in a sub-scanning direction;
 - a second reference member which is arranged in an area other than the original scanning area of said image sensor in the sub-scanning direction;
 - a memory adapted to store a predetermined time since said light source is turned on until a maximum of electrical signals output from said ~~plurality of image sensing elements~~ image sensor at the time said light source is turned on changes a predetermined rate;
 - a timer adapted to measure ~~[[a]]~~ an on time since said light source is turned on; and
 - a controller adapted to determine whether the time measured by said timer reaches the predetermined time, in a case that the predetermined time has not elapsed, ~~acquire shading correction data by a first method using~~ control said image sensor to scan said first reference member illuminated by said light source for acquiring a coefficient for uniformly changing level of the electrical signals, and in a case that the predetermined time has elapsed, ~~acquire shading correction data by a~~

~~second method using control said image sensor to scan~~ said second reference member illuminated by said light source for acquiring shading correction data in a main scanning direction.

2. (Canceled)

3. (Currently Amended) The apparatus according to claim 1, further comprising:

a correction unit which uses the shading correction data to perform shading correction on the electrical signals output from said image ~~sensing elements~~ sensor.

4. (Original) The apparatus according to claim 1, wherein said first and second reference members comprise white plates.

5. (Currently Amended) The apparatus according to claim 4, wherein said first reference member is ~~[[set]]~~ arranged at an end portion of a main scanning direction ~~at a predetermined position of a subscanning direction, and said second reference member is set in the main scanning direction at a predetermined position in the subscanning direction.~~

6. (Currently Amended) The apparatus according to claim 1, wherein the determination by said controller is performed before each ~~[[document]]~~ original sheet is read.

7. (Currently Amended) The apparatus according to claim 6, further comprising:

 a [[document]] feeder capable of successively supplying a plurality of [[document]] original sheets,

 wherein said controller performs the determination in a case that said [[document]] feeder supplies each [[document]] original sheet to a predetermined position.

8. (Currently Amended) The apparatus according to claim 1, wherein in a case that a first [[document]] original sheet is to be read after said light source is turned on, said controller ~~acquires shading correction data using~~ controls said image sensor to scan said second reference member illuminated by said light source for acquiring shading correction data in the main scanning direction before start of read of the [[document]] original sheet.

9. (Currently Amended) The apparatus according to claim 8, wherein in a case that [[a]] the first [[document]] original sheet is to be read after said light source is turned on, and the predetermined time has not elapsed, said controller skips ~~acquisition of shading correction data using~~ controlling said image sensor to scan said first reference member illuminated by said light source for acquiring the coefficient for uniformly changing level of the electrical signals.

10. - 14. (Canceled)

15. (Currently Amended) A control method for an image reading unit having a light source adapted to illuminate ~~a document~~ an original, ~~a plurality of image sensing elements~~ an image sensor adapted to scan said original and output electrical signals ~~in accordance with an input light quantity~~, a first reference member which is arranged in an original scanning area of said image sensor in a sub-scanning direction, and a second reference member which is arranged in an area other than the original scanning area of said image sensor in the sub-scanning direction, comprising:

storing a predetermined time since said light source is turned on until a maximum of electrical signals output from said ~~plurality of image sensing elements~~ image sensor at the time said light source is turned on changes a predetermined rate;

measuring ~~[[a]]~~ an on time since the light source is turned on;

determining whether the measured time reaches the predetermined time;

~~acquiring first shading correction data using~~ controlling said image sensor to scan the first reference member illuminated by said light source for acquiring a coefficient for uniformly changing level of the electrical signals in a case that the predetermined time has not elapsed; and

~~acquiring second shading correction data using~~ controlling said image sensor to scan the second reference member illuminated by said light source for acquiring shading correction data in a main scanning direction in a case that the predetermined time has elapsed.

16. (Canceled)

17. (Currently Amended) The method according to claim 15, further comprising:

performing shading correction on the electrical signals output from the image sensor ~~sensing elements by using the first shading correction data or the second shading correction data.~~

18. (Original) The method according to claim 15, wherein the first and second reference members comprise white plates.

19. (Currently Amended) The method according to claim 18, wherein the first reference member is ~~[[set]]~~ arranged at an end portion of a main scanning direction ~~at a predetermined position of a subscanning direction of a document, and the second reference member is set in the main scanning direction at a predetermined position in the subscanning direction.~~

20. (Currently Amended) The method according to claim 15, wherein said determination ~~and said acquisition of the first shading correction data or the second shading correction data are~~ is performed before each ~~[[document]]~~ original sheet is read.

21. (Currently Amended) The method according to claim 20, wherein the image reading unit further comprises a ~~[[document]]~~ feeder capable of successively supplying a plurality of ~~[[document]]~~ original sheets, and said determination ~~and said acquisition of the first shading correction data or the second shading correction data are~~ is performed in a case that the ~~[[document]]~~ feeder supplies each ~~[[document]]~~ original sheet to a predetermined position.

22. (Currently Amended) The method according to claim 15, further comprising determining whether ~~[[a document]]~~ an original sheet is a first document sheet after the light source is turned on,

wherein in a case that the ~~[[document]]~~ original sheet is determined to be the first document sheet, ~~said acquisition step of the second shading correction data~~ controlling of said image sensor to scan the second reference member illuminated by said light source is executed before start of read of the ~~[[document]]~~ original sheet regardless of a result of determining whether the measured time reaches the predetermined time.

23. (Currently Amended) The method according to claim 22, wherein in a case that the [[document]] original sheet is determined to be the first document sheet, said ~~acquisition of the first shading correction data~~ controlling of said image sensor to scan the first reference member illuminated by said light source for acquiring a coefficient for uniformly changing level of the electrical signals is skipped regardless of the result of determining whether the measured time reaches the predetermined time.

24. - 25. (Canceled)

26. (New) An image reading apparatus comprising:

- a light source adapted to illuminate an original;
- an image sensor adapted to scan said original and output electrical signals;
- a reference member which is arranged in an area other than an original scanning area of said image sensor in a sub-scanning direction;
- a memory adapted to store a predetermined time since said light source is turned on until a maximum of electrical signals output from said image sensor at the time said light source is turned on changes a predetermined rate;
- a timer adapted to measure an on time since said light source is turned on;

and

- a controller adapted to determine whether the time measured by said timer reaches the predetermined time, and in a case that the predetermined time has

elapsed, control said image sensor to scan said reference member illuminated by said light source for acquiring shading correction data in a main scanning direction.

27. (New) A control method for an image reading unit having a light source adapted to illuminate an original, an image sensor adapted to scan said original and output electrical signals, a reference member which is arranged in an area other than an original scanning area of said image sensor in a sub-scanning direction, comprising:

storing a predetermined time since said light source is turned on until a maximum of electrical signals output from said image sensor at the time said light source is turned on changes a predetermined rate;

measuring an on time since the light source is turned on;

determining whether the measured time reaches the predetermined time; and

controlling said image sensor to scan the reference member illuminated by said light source for acquiring a coefficient for uniformly changing level of the electrical signals in a case that the predetermined time has not elapsed; and

controlling said image sensor to scan the reference member illuminated by said light source for acquiring shading correction data in a case that the predetermined time has elapsed.